

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-004509**Date Inspected:** 01-Nov-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2300**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai China**CWI Name:** Zhu Zhong Hai**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower**Summary of Items Observed:**

89M mock up

Caltrans QA Inspector observed that ZPMC was performing the welding of fit-lug to diaphragm plate on 2 welds; these welds were identified as MUB-MA21-A/J-58 and MUB-MA21-A/J-27. Upon the arrival of this QA inspector it was observed that ZPMC was using 2 different welding procedures and 2 different fit lug sizes for these locations. Weld number MUB-MA21-A/J-58, used a fit lug size of 75 mm x 370mm x 30mm with welding procedure ABF-WPS-D15-F1202A using welding electrode E7018 C3L H4R, 3.2mm electrode was being applied by welder # 067993 with the SMAW welding process. The welding parameters for this location was pre-heat of 189°C, 130 amps, 24 volts and a travel speed of 95mm/min. Weld number MUB-MA21-A/J-27 used a fit lug size of 150mm x 370mm x 30mm with welding procedure WPS-B-T-4113-2 with welding electrode E7018-1, 4.0mm diameter applied by welder # 068924. ZPMC completed the MT of the root passes by technician Cai Xin Xin with acceptable results as stated by ZPMC. ABF personnel were present for the MT and also accepted these results for the hold point as outlined within the procedure. According to the ABF letter dated October 14, 2008 the weld trials were to be done by using "the same equipment, equipment set up, welders and QC/QA staff" it has been observed and documented that ZPMC has not used the same welders for these trials. The welders used are as follows; for date 10-28-08, FCAW welders 067079 and 066734, for date 10-30-08, SMAW welders 054467 and 048659 and for today's date 11-1-08, SMAW welders 067993 and 068924 (for 10-31-08 this QA inspector was not present due to scheduled day off, unknown of which welders used). The starting time and temperatures for the controlled cool down started at 1200 hrs with a starting temperature of 198°C the ambient temperature was approximately 27°C. Below are the details of the controlled cool down.

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1200 hrs – 198°C (Start of cool down)
1230 hrs – 186°C
1300 hrs – 172°C (26°C drop in 1 hour)
1330 hrs – 156°C
1400 hrs – 140°C (32°C drop in 1 hour)
1430 hrs – 122°C
1500 hrs – 108°C (32°C drop in 1 hour)
1530 hrs – 90°C
1600 hrs – 72°C (36°C drop in 1 hour)
1630 hrs – 57°C
1700 hrs – 49°C (23°C drop in 1 hour)
1730 hrs – 39°C
1800 hrs – 35°C (14°C drop in 1 hour)

The controlled cool down appears to be within the requirements of the submitted procedure by ABF.



Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Josh Ishibashi, 1-376-471-0411, who represents the Office of Structural Materials for your project.

Inspected By:	Riley, Ken	Quality Assurance Inspector
Reviewed By:	Carreon, Albert	QA Reviewer
